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A DESCRIPTIVE EPIDEMIOLOGIC STUDY OF EQUINE LAMINITIS IN PRIVATE PRACTICE AND THE TEXAS VETERINARY MEDICAL CENTER

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Equine laminitis is an important disease for the horse owner and horse industry. The disease occurs in all breeds of horses used for different purposes in all geographic locations (Baxter, 1992; Linford, 1990; Stashak, 1992). The disease has a high economic cost due to treatment expense and loss of performance and breeding potential. There are also important humane considerations due to the chronic pain and the potential need for euthanasia.

Studying the disease is difficult because of limited epidemiologic work on horses with spontaneously occurring laminitis, the diverse presentation and progression of the disease and small numbers of affected animals at any single clinic (Colles, 1991). Horses with laminitis may be classified into three relatively homogenous groups in terms of treatment and prognosis: acute (less than 2 days duration of signs with no radiographic or physical signs of displacement of the third phalanx), subacute (greater than 2 days duration of signs with no displacement of the third phalanx) or chronic (any horse with mechanical displacement of the third phalanx radiographically, perforation of the sole or dropped sole on physical examination) (Hood et al., 1993).

A multicenter approach was used in order to obtain enough horses in each group for meaningful analyses (Dorn et al., 1975). Private practices were included as nine of ten centers. The objectives of this project were to: 1) enumerate the populations of horses with acute and chronic laminitis; 2) evaluate the age, breed, sex, weight, body condition and crestiness of the neck of horses at risk for acute and chronic laminitis; 3) describe the types of potential predisposing factors for acute laminitis and 4) describe the treatment protocols used.

MATERIALS AND METHODS

Nine equine or mixed animal private practices were recruited for the study. Cases were collected beginning in May and June of 1992 and finishing in July 1993. Clinicians at the Texas Veterinary Medical Center (TVMC) also participated. The study had a matched case-control component and a descriptive component. Age, breed, sex, weight, body condition and crestiness of the neck were the variables examined in the case-control study (Schlesselman, 1982). The control horse was the next horse (without laminitis) seen by the clinician who examined the laminitis case. The descriptive component included information on stage of laminitis (acute, subacute, chronic by specified definitions), physical examination findings and treatment protocols. Participating veterinarians were contacted by telephone each month if no data were received that month.

RESULTS

Seven private practices participated in the study; two did not provide any case material. Between two and 12 cases of laminitis were seen in each practice. Acute and subacute cases were grouped as 'acute' due to the small number of subacute animals (three). Nineteen acute and 20 chronic cases were seen in practice.

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Fifteen acute and 54 chronic cases were seen at the TVMC for a total of 34 acute and 74 chronic laminitis horses. McNemar's chi-square and paired-t tests were used to evaluate age, breed, sex and weight as risk factors. There were too many missing data to analyze body condition and crestiness of the neck. There were no significant associations for acute laminitis cases. For chronic laminitis, age was significantly different (P = 0.02) and sex tended towards significance (P = 0.08).

Gastrointestinal disease was the most common problem (53%) occurring just prior to the onset of acute laminitis. Colic and grain overload were the most common types of gastrointestinal problem. In practice, pasture or grass founder was also very common. Two animals developed laminitis following unilateral leg lameness or hoof trauma. Ten horses had no known health problem prior to the occurrence of laminitis.

The most commonly used drugs were phenylbutazone (68% of all horses), acepromazine and DMSO followed by antibiotics and banamine. Chi-square analysis of the three most common drugs showed significantly different patterns in use between acute and chronic horses. There were also significant differences between private practitioners and the clinicians at the TVMC for use of DMSO in acute horses and phenylbutazone in chronic horses.

Almost all of the horses with acute laminitis did not have any hoof trimming or special shoeing. More than half of the chronic horses did have some type of trimming or hoof wall resection. About two-thirds of the chronic horses had special shoeing as part of their therapy. Heartbar and flat shoes were the most common types used.

DISCUSSION

Studies of laminitis in horses have been hampered by limited sample size. This study was also limited primarily because of the relatively infrequent occurrence of laminitis in private practice. These practices were selected because of their interest and the personal knowledge of the veterinarians by the collaborators in this project. In spite of these criteria, personal visits prior to beginning the study and repeated telephone calls, at least one practice had very poor compliance and two practices, in the end, did not provide any data for the study at all. In addition, collection of complete data sheets was difficult; however, this was primarily a problem at the TVMC. Most of the practitioners provided complete data collection sheets.

Different patterns of the frequency of acute and chronic disease were seen between the private practices and the TVMC. This was expected based on anecdotal reports. In addition, there were some differences in treatment protocols. However, due to the large number of clinicians who saw cases at the TVMC, these different treament patterns may reflect individual variation and not inherent distinctions between private practice and academic practice.

This project lays the foundation for other observational and experimental studies. Specifically, data on the progression of the disease, the likelihood that horses with acute laminitis will develop rotation and the ultimate outcome are being evaluated. Once a group of collaborators has been developed who can be relied upon to provide quality data, clinical trials of specific treatment protocols can be developed and implemented.

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